

**Notice of Allowability**

Application No.

10/601,757

Applicant(s)

MARTIN ET AL.

Examiner

Amelia A. Owens

Art Unit

1625

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amdt filed 7/7/2006.
2. ☒ The allowed claim(s) is/are 21-32.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other DRAWINGS ACCEPTED.

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**EXAMINER'S AMENDMENT**

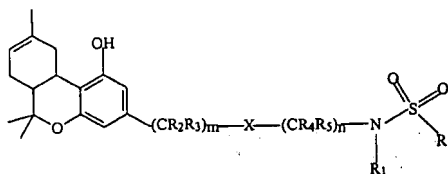
An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

**Specification** before 'This invention...' insert -----This application claims benefit of 60/402,048 08/09/2002.-----

Please cancel all claims and replace with the following:

-----**Claim 21.** A compound of the general formula



where

m is an integer from 0 to 5;

n is an integer from 0 to 5;

R is C<sub>1</sub> to C<sub>7</sub> alkyl, cycloalkyl, phenyl, hydroxy, alkyl hydroxy, substituted phenyl, or

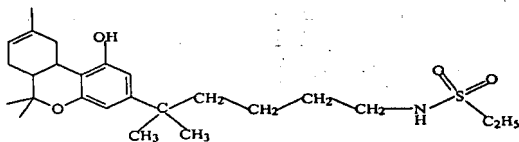
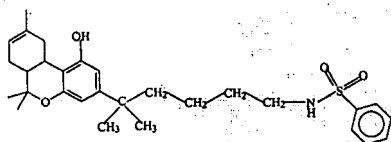
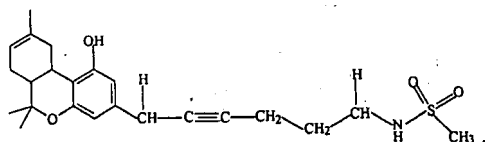
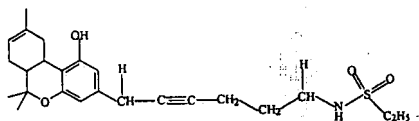
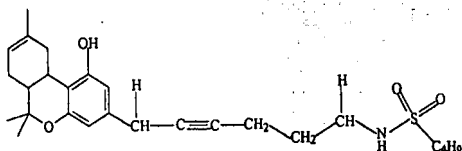
CH<sub>2</sub>X<sup>1</sup>, where X<sup>1</sup> = H, Cl, Br, I or F;

R<sub>1</sub> is H, <sup>OR</sup> C<sub>1</sub> to C<sub>7</sub> alkyl, phenyl, or substituted phenyl;

R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> are H or C<sub>1</sub> to C<sub>7</sub> alkyl, and R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> may be the same or different; and

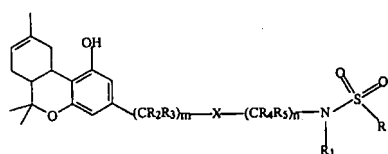
X is CH<sub>2</sub> or a saturated or unsaturated C<sub>2</sub> carbon chain.

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**Claim 22.** A compound of formula**Claim 23.** A compound of formula**Claim 24.** A compound of formula**Claim 25.** A compound of formula**Claim 26.** A compound of formula

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**Claim 27.** A method of treatment of a condition or disorders related to cannabinoid-regulated systems in a patient in need thereof, wherein if said compound is an agonist of a CB1 receptor then said condition is selected from the group consisting of acute pain; chronic pain; loss of appetite; and nausea and vomiting; and wherein if said compound is a silent antagonist of a CB1 receptor then said condition is obesity; comprising the step of administering to said patient a quantity of a compound of formula



where

m is an integer from 0 to 5;

n is an integer from 0 to 5;

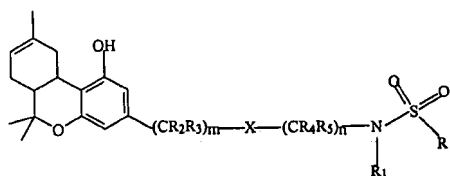
R is C<sub>1</sub> to C<sub>7</sub> alkyl, cycloalkyl, phenyl, hydroxy, alkyl hydroxy, substituted phenyl, or CH<sub>2</sub>X<sup>1</sup>, where X<sup>1</sup> = H, Cl, Br, I or F;

R<sub>1</sub> is H, C<sub>1</sub> to C<sub>7</sub> alkyl, phenyl, or substituted phenyl;

R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> are H or C<sub>1</sub> to C<sub>7</sub> alkyl, and R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> may be the same or different; and

X is CH<sub>2</sub> or a saturated or unsaturated C<sub>2</sub> carbon chain.

**Claim 28.** A method for treating pain in a patient comprising administering to said patient an effective dose of an agonist of a CB1 cannabinoid receptor wherein said agonist includes a sulfonamide moiety, and said agonist has the chemical formula



where

m is an integer from 0 to 5;

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n is an integer from 0 to 5;

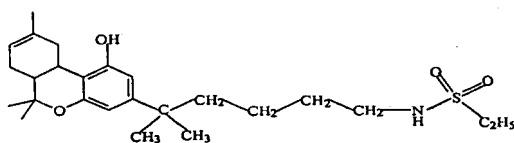
R is C<sub>1</sub> to C<sub>7</sub> alkyl, cycloalkyl, phenyl, hydroxy, alkyl hydroxy, substituted phenyl, or CH<sub>2</sub>X<sup>1</sup>, where X<sup>1</sup> = H, Cl, Br, I or F;

R<sub>1</sub> is H, C<sub>1</sub> to C<sub>7</sub> alkyl, phenyl, or substituted phenyl;

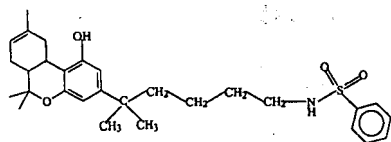
R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> are H or C<sub>1</sub> to C<sub>7</sub> alkyl, and R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> may be the same or different; and

X is CH<sub>2</sub> or a saturated or unsaturated C<sub>2</sub> carbon chain.

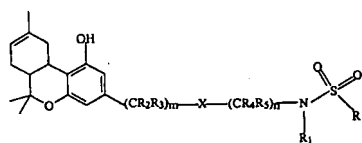
**Claim 29.** The method of claim 28 wherein said agonist is selected from the group consisting of



and



**Claim 30.** A method for treating nausea in a patient comprising administering to said patient an effective dose of a agonist of CB1 cannabinoid receptor wherein said agonist includes a sulfonamide moiety, and wherein said agonist has the chemical formula

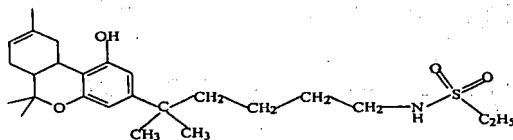


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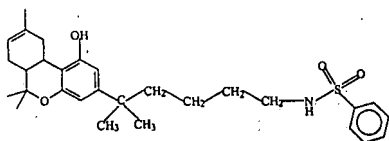
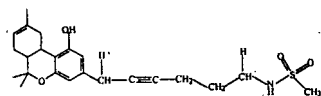
where

m is an integer from 0 to 5;

n is an integer from 0 to 5;

R is C<sub>1</sub> to C<sub>7</sub> alkyl, cycloalkyl, phenyl, hydroxy, alkyl hydroxy, substituted phenyl, or CH<sub>2</sub>X<sup>1</sup>, where X<sup>1</sup> = H, Cl, Br, I or F;R<sub>1</sub> is H, C<sub>1</sub> to C<sub>7</sub> alkyl, phenyl, or substituted phenyl;R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> are H or C<sub>1</sub> to C<sub>7</sub> alkyl, and R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> may be the same or different; andX is CH<sub>2</sub> or a saturated or unsaturated C<sub>2</sub> carbon chain.**Claim 31.** The method of claim 30 wherein said agonist is selected from the group consisting of

and

**Claim 32.** A method for treating obesity in a patient comprising administering to said patient an effective dose of a silent antagonist of CB<sub>1</sub> cannabinoid receptor wherein said agonist includes a sulfonamide moiety, and wherein said agonist has the chemical formula

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The claims were replaced as the text was unclear in the fax copy. Please note the claims are identical to claims 1-7, 10, 12, 13, 15, 17 as presented by applicants.

### REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

1. The rejections of record are dropped as claims have been amended and or canceled; and applicant's remarks are persuasive. Claims 21-32 are allowed.
2. Martin et al, ICRS, 12<sup>th</sup> Annual, Symposium on the Cannabinoids, July 10, 2002 – July 14, 2002, abstracts page 2 is noted. Applicants have submitted a declaration showing invention disclosure statement dated March 28, 2002 that antedates the reference.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amelia A. Owens whose telephone number is 571-272-0690. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. McKenzie can be reached on 571-272-0670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Amelia A. Owens  
Primary Examiner  
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